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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,175	01/31/2001	Mark E. Newbury	1-21	6070

7590 07/19/2004

CLAUDE R. NARCISSE, ESQ.
GREEN TRAUIG, LLP
885 THIRD AVENUE
NEW YORK, NY 10022

EXAMINER

DANIEL JR, WILLIE J

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 07/19/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,175

Applicant(s)

NEWBURY ET AL.

Examiner

Willie J. Daniel, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,10-16,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,10-16,19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 May 2004 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 10-16, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (hereinafter Leung) (EP 0701382 A1) in view of Ivanov et al. (hereinafter Ivanov) (US 5,457,810).

Regarding **Claim 1**, Leung discloses of a method of communicating in a hierarchical cellular system (100) (see col. 2, lines 38-50; col. 3, lines 39-45; col. 4, lines 18-27; col.9, line 54 - col. 10, line 8; Figs. 1 and 4), said method comprising the steps of:

determining cell sojourn time which hereinafter reads on the claimed "timer value" which is a function of the duration that a mobile unit (108) which reads on the claimed "wireless

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unit” operates within at least a cell of a first layer (see column 3, lines 6-12, 39-45; col. 11, line 3-19; Figs. 1, 3a, and 4), where the time in the cell is monitored; and

using said timer value in determining whether said wireless unit (108) is to be handed off to at least a cell of a second layer (see column 3, lines 3-5,39-45; col. 4, lines 18-27; col. 12, lines 9-45; Figs. 1 and 4), where the cell sojourn time of the mobile unit within a cell is compared to a threshold which determines if handoff should be performed between layers

wherein using comprises comparing said timer value to a first threshold (τ_H) and handing off to a layer of smaller cells if said timer value is greater than said first threshold (τ_H) (see Fig. 4), and comparing said timer value to a second threshold (τ_L) and handing off to a layer of larger cells if said timer value is less than said second threshold (τ_L) (see col. 12, lines 9-45; see Fig. 4), where the system uses high and low thresholds for time comparison for handing of the mobile unit to a lower or higher layer of a hierarchical system.

wherein the determination of said handing off is performed by system equipment other than the wireless unit (108) (see col. 10, lines 9-24; col. 12, lines 9-13), where the base station determines the handoff of a call by comparing the threshold. Leung fails to disclose having the feature of determination of said timer value is performed by system equipment other than the wireless unit. However, the examiner maintains that the feature of determination of said timer value is performed by system equipment other than the wireless unit was well known in the art, as taught by Ivanov.

In the same field of endeavor, Ivanov discloses of having the feature of determination of said dwell time which reads on the “timer value” is performed by system equipment other than the wireless unit (see col. col. 3, lines 36-47; col. 4, lines 1-19,24-36; col. 5, lines 1-

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4,43-52; col. 6, lines 59-67; col. 8, lines 50-51), where the system has a timer (T_{HO}) and monitoring timer (TR) for measuring the dwell time in a cell as part of the handover decision process for the mobile station (MS).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Leung and Ivanov to have the feature of determination of said timer value is performed by system equipment other than the wireless unit, in order to monitor the time a mobile station is within a cell, as taught by Ivanov.

Regarding **Claim 2**, Leung discloses of wherein said step of determining comprises:

starting a timer as said wireless unit (108) operates within a first cell of said first layer (see col. 11, lines 3-10; col. 12, lines 9-16; Fig. 4), where the cell sojourn time of a mobile station is measured in which the starting of a timer would be obvious. Leung fails to disclose having the feature of stopping said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer. However, the examiner maintains that the feature of stopping said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer was well known in the art, as taught by Ivanov.

Ivanov further discloses of teaches the feature of stopping said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer (see col. 3, lines 28-32; col. 5, lines 43-52), where the timer is stopped during the handover.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Leung and Ivanov to have the feature of stopping said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer, in order to stopped the timer, as taught by Ivanov.

Regarding **Claim 3**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 1), in addition Leung further discloses determining an amount of time said wireless unit (108) is within a first cell of said first layer before being handed off to a second cell of said first layer (see col. 12, lines 9-13,34-37; Figs. 3a, 4), where the cell sojourn time is measured and compared to determined for the mobile station to be handed off within the same layer.

Regarding **Claim 4**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 3), in addition Leung further discloses using said amount of time said wireless unit (108) is within said first cell as said timer value (see col. 11, lines 3-7; ; col. 12, lines 9-45; Figs. 3a, 4), where the cell sojourn time is the amount of time a mobile unit spends in a cell.

Regarding **Claim 5**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 3), in addition Leung further discloses determining said timer value as a function of said amount of time said wireless unit (108) is within said first cell (see col. 11, lines 3-23,52-54; col. 11, line 57 - col. 12, line 4; col. 12, lines 9-45; Figs. 3a, 4), where the cell sojourn time of the mobile station is monitored for each cell.

Regarding **Claim 6**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 5), in addition Leung further discloses determining said timer value as, a function of amounts of time said wireless unit (108) is within cells of said first layer (see col. 3, lines 39-45; col. 11, line 57 - col. 12, line 4; Figs. 3a, 4), where the cell sojourn time is aggregated for the amount of time spent in a layer.

Regarding **Claim 7**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 1), in addition Leung further discloses of comparing said timer value to a first threshold (see col. 12, lines 34-45; Fig. 4); and handing off said wireless unit (108) to a second layer depending on said comparison (see col. 12, lines 34-45; Fig. 4).

Regarding **Claim 10**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 1), in addition Leung further discloses of remaining in a current layer if said timer value is less than said first threshold and greater than said second threshold (see col. 12, lines 35-45; Fig. 4), where the cell sojourn time is compared to the threshold for the mobile station to remain in the current layer.

Regarding **Claim 11**, Leung discloses of an inter-layer handoff system for communicating in a hierarchical cellular system (100) (see col. 2, lines 38-50; col. 3, lines 39-45; col. 4, lines 18-27; col. 9, line 54 - col. 10, line 8; Figs. 1 and 4), said system comprising:

processing circuitry configured to determine a timer value which is a function of the duration that a wireless unit (108) operates within at least a cell of a first layer of said hierarchical cellular system and to use said timer value in determining whether said wireless unit (108) is to be handed off to at least a cell of a second layer (see col. 11, lines 3-24; col. 12, lines 9-45; Fig. 4), where cell sojourn time is monitored for handoff between layers in which the processing circuitry would be obvious,

wherein the processing circuitry is configured to compare said timer value to a first threshold and handoff to a layer of smaller cells if said timer value is greater than said first

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threshold and compare said timer value to a second threshold and handoff to a layer of larger cells if said timer value is less than said second threshold (see col. 11, lines 3-24 col. 12, lines 9-45; Fig. 4), where cell sojourn time is monitored for handoff between layers in which the processing circuitry would be obvious, and

wherein the determination of said handing off is performed by system equipment other than the wireless unit (108) (see col. 10, lines 9-24; col. 12, lines 9-13), where the base station determines the handoff of a call by comparing the threshold. Leung fails to disclose having the feature of determination of said timer value is performed by system equipment other than the wireless unit. However, the examiner maintains that the feature of determination of said timer value is performed by system equipment other than the wireless unit was well known in the art, as taught by Ivanov.

Ivanov further discloses of having the feature of determination of said dwell time which reads on the "timer value" is performed by system equipment other than the wireless unit (see col. 3, lines 36-47; col. 4, lines 1-19, 24-36; col. 5, lines 1-4, 43-52; col. 6, lines 59-67; col. 8, lines 50-51), where the system has a timer (T_{HO}) and monitoring timer (TR) for measuring the dwell time in a cell as part of the handover decision process for the mobile station (MS).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Leung and Ivanov to have the feature of determination of said timer value is performed by system equipment other than the wireless unit, in order to monitor the time a mobile station is within a cell, as taught by Ivanov.

Regarding **Claim 12**, Leung discloses of wherein said processing circuitry is configured to start a timer as said wireless unit operates within a first cell of said first layer (see col. 11, lines 3-10; col. 12, lines 9-16; Fig. 4), where the cell sojourn time of a mobile station is measured in which the indicates the start of a timer in which the timer and processing circuitry would be obvious. Leung fails to disclose having the feature to stop said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer. However, the examiner maintains that the feature to stop said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer was well known in the art, as taught by Ivanov.

Ivanov further discloses of the feature to stop said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer (see col. 3, lines 28-32; col. 5, lines 43-52), where the timer is stopped during the handover.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Leung and Ivanov to have the feature to stop said timer after a trigger is detected for handing off said wireless unit to a second cell of said first layer, in order to stopped the timer, as taught by Ivanov.

Regarding **Claim 13**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 11), in addition Leung further discloses determining an amount of time said wireless unit (108) is within a first cell of said first layer before being handed off to a second cell of said first layer (see col. 12, lines 9-13,34-37; Fig. 4), where the cell sojourn time is measured and compared to determined for the mobile station to be handed of within the same layer in which the processing circuitry would be obvious.

Regarding **Claim 14**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 13), in addition Leung further discloses wherein said processing circuitry configured to use said amount of time said wireless unit (108) is within said first cell as said timer value (see col. 11, lines 3-7; col. 12, lines 9-45; Figs. 3a, 4), where the cell sojourn time is the amount of time a mobile unit spends in a cell in which the processing circuitry would be obvious.

Regarding **Claim 15**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 13), in addition Leung further discloses wherein said processing circuitry is configured to determine said timer value as a function of said amount of time said wireless unit (108) is within said first cell (see col. 11, lines 3-23, 52-54; col. 11, line 57 - col. 12, line 4; col. 12, lines 9-45; Figs. 3a, 4), where the cell sojourn time of the mobile station is monitored for each cell in which the processing circuitry would be obvious.

Regarding **Claim 16**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 15), in addition Leung further discloses wherein said processing circuitry is configured to determine said timer value as a function of amounts of time said wireless unit (108) is within cells of said first layer (see col. 3, lines 39-45; col. 11, line 57 - col. 12, line 4; Figs. 3a, 4), where the cell sojourn time is aggregated for the amount of time spent in a layer in which the processing circuitry would be obvious.

Regarding **Claim 19**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 11), in addition Leung further discloses of wherein said processing circuitry further configured to compare said timer value to a second threshold and handoff to a layer of larger cells if said timer value is less than said second threshold (see col.

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12, lines 34-45; Fig. 4), where the cell sojourn time is compared to the threshold for handoff between the layers in which the processing circuitry would be obvious.

Regarding **Claim 20**, the combination of Leung and Ivanov discloses every limitation claimed, as applied above (see claim 11), in addition Leung further discloses wherein said processing circuitry is further configured to remain in a current layer if said timer value is less than said first threshold and greater than said second threshold (see col. 12, lines 35-45; Fig. 4), where the cell sojourn time is compared to the threshold for the mobile station to remain in the current layer in which the processing circuitry would be obvious.

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Response to Arguments

3. Applicant's arguments with respect to claims 1-7, 10-16, 19-20 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (703) 305-8636. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJD,JR/wjd,jr
11 July 2004


CHARLES APPIAH
PRIMARY EXAMINER